

Beef is bullish for your health

by Bruce Paterson

Editor's note: The second in our series on beef and its importance to our diet, its practicality as part of today's agriculture, and the necessity of defending its place and role in American lifestyles. The next article will consider arable land, forages, and feedstuffs for a hungry world.

The lifespan of the average American is now well above 70 years of age. This statistic should reflect a population that is happy with and confident in its health. However, just the opposite is true.

Americans have never been so concerned with their health, and more directly, how diet will affect their health. There is nothing wrong with this attitude. The unfortunate thing is that as nutrition becomes involved, everyone is an expert.

These "experts" will recommend a new diet and people believe it because anything new must be better. In addition, these diets seldom recommend eating from all food groups in moderation because moderation simply does not sell. But, what is written, definitely does sell. In the past decade, annual sales of health publications have boomed to more than \$300 million. This rapid growth in health-related publications has led to the publication of significant amounts of misinformation.

Last year, the American Council on

Science and Health, a national scientific organization comprised of mostly university professors, surveyed 30 periodicals and found that one-third of the publications' health articles were "inconsistent"—50 percent to 80 percent accurate, or "unreliable"—less than 50 percent accurate. Thus, it's good advice to check proposed diets and fitness programs as well as their sources of information with a doctor or licensed dietician before beginning them.

Before discussing beef and its effects on our health, it's important to know what types of beef consumers are purchasing beef and what they find of concern. In 1985, a survey of 1,211 primary grocery shoppers revealed that 68 percent of all primary food shoppers strongly agreed it's important to limit fat intake even when not concerned about weight control.

Salt in the diet was of extreme concern to 53 percent and 45 percent said they make a real effort to avoid foods high in cholesterol. Also, 28 percent said a main meal must include meat to really satisfy their appetite and 26 percent said they are considering cutting down or already have cut down on the meat they eat for health reasons.

On a more positive note, 51 per-

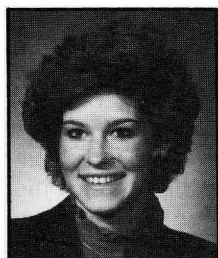
cent said they would buy meat more often if lower-calorie cuts were identified. An even larger number, 72 percent, said they would buy meat more often if they saw better-trimmed, lean cuts of fresh meat in the supermarket. A consumer survey was conducted for the National Live Stock and Meat Board and this study divided meat shoppers into five attitudinal segments. They include: **Health Oriented** (24 percent). These consumers have the most concern for all health-related issues. **Active Lifestyle** (26 percent). Meat purchases are generally regulated by speed and ease of preparation. There is still a high degree of concern about nutrition. **Price-Driven** (23 percent). Price is the main determinant in these consumers' food purchase decisions. **Creative Cook** (18 percent). This group tends to be the oldest. This group enjoys meal preparation and have a moderately high level of concern about nutrition. **Meat Lovers** (10 percent). Statistically, the youngest group. They show strong preference for red meat, exhibit less concern for nutrition and are not price-sensitive.

There are fewer consumers classified as Meat Lovers in 1985 as compared to 1983 (10 percent vs 22 per-

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Beef promotion is everyone's job

—From a junior's perspective



by Mary Ellen Shaw
Chairman, National Junior Angus Assn.

Diet and health is very important to today's society. Everywhere you turn someone has come up with a new diet to shed those excess pounds. It's fairly safe to say that few of them include beef. Most diets discourage the use of red meat and encourage the consumption of poultry, seafood, or vegetables.

Health is also a large area of concern. Some

consumers believe they will be more susceptible to cancer, heart attacks, and other cardiovascular diseases if they consume red meat. Much attention has been given to cholesterol intake and its relationship to good health. The American Heart Association's recommended daily allowance of cholesterol is 300 mg./day. Using the basis of mg. of cholesterol to 100 grams of weight, butter has 280 mg., cheddar cheese has 113 mg., one whole egg has 560 mg., and a chicken breast has 90 mg. Red meat is lower than all of these, with beef containing only 87 mg. of cholesterol. These figures would indicate the American public is being misled.

Convenience foods are an important aspect in today's food preparation. The 1980 U.S. Census Bureau reported 45 percent of mothers with preschool age children worked away from home.

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cent, respectively). However, among the Active Lifestyle and Health Oriented groups, there is an increase in the number of heavy or moderate users of fresh and processed meat.

Now, how do we get these consumers to continue to make beef an important part of their meal planning decisions? Most importantly, the positive characteristics of beef need to be stressed. Rather than illustrate the problems of beef's competitors, we need to emphasize the many favorable qualities beef offers to the diet. Secondly, as the healthfulness of beef is questioned, these challenges need to be disputed with the clear, accurate scientific facts that are known because of years of research.

Counting calories? If you are, beef fits superbly in a low-calorie diet because beef is leaner than ever. In the past 30 years, the fat content of beef animals has decreased by 35-40 percent. While the average three ounce serving of beef contains 192 calories, some cuts are as low as 157 calories. The three ounce serving of beef, containing only 192 calories, provides just eight percent of the average daily caloric intake of an adult male. The calorie conscious person should beware of the condiments served with meat such as tartar sauce, mayonnaise, catsup, mustard and the oils used in preparation, all of which, can contribute more calories than the meat itself.

Today's lean beef is also an excellent source of high-quality protein. Protein quality refers to the amino acid composition. Eight of the amino acids essential in human nutrition cannot be synthesized to a significant extent in the human body and therefore must be furnished in the diet. The protein in beef provides these essential amino acids in proportions needed by humans and is therefore termed "high quality." The quality of protein from plants is lower because one or more of the essential amino acids is low compared with human requirements. Proteins are utilized more efficiently in the body if the protein quality is high than if it is low. A three ounce serving of beef will provide 45 percent of an adult male's RDA for protein.

In exchange for these 192 calories, the adult male also receives 79 percent of his vitamin B-12, 26 percent of the necessary niacin, 22 percent of

the thiamine, 16 percent of the B-6, and 18 percent of his needed vitamin B-2. B-vitamins are vital for most metabolic processes that support human life and beef is an outstanding source for most of them.

All red meats are excellent sources of dietary iron. Three ounces of cooked lean beef contributes 26 percent of the adult male RDA for this essential mineral. Of greatest importance, 62 percent of the iron in beef is "heme" iron which is far more usable by the body than the iron found in other foods. In fact 20 per-

cent of the iron from beef is absorbed by the body, whereas less than five percent of the iron in vegetables and cereals is absorbed. Also, heme iron makes iron from other dietary sources more usable, as long as they are consumed together during the same meal.

That same three ounces of cooked beef also provides 38 percent of the adult male RDA for the mineral zinc. Beef also provides other important minerals like phosphorus, potassium and other essential micro-nutrients, many of which cannot be provided by

plant foods. Beef provides a relatively high contribution of essential nutrients while yielding a relatively low amount of calories. This is why beef is a "nutrient dense" food appropriate for today's active lifestyles.

How healthy are Americans? Because heart disease and cancer are the leading causes of death in the United States, should Americans panic and completely alter their lifestyles and eating habits? While we should be concerned with our health, panic is definitely not in order. Dr. David P. Price (*BEEF*, March 1984) made several excellent observations concerning the state of our health. He stated that the probable reason heart disease is the number one killer is due to the fact that we are an aging population. At the turn of the century pneumonia and tuberculosis were the number one and two killers while heart disease was number four. Also, life expectancy at that time was in the mid-forties while today it is in the early-seventies. Thus Dr. Price concluded that diseases of the aged (such as cancer and heart disease) should be more prevalent in the population.

If the consumption of beef has created many of our health problems, as some people would lead you to believe, why then during the past 30

years when beef consumption has increased have we seen the most extensive improvement in the health of the American population? People are living longer, children have grown larger than their parents and infant mortality is lower.

Moderation simply does not sell.

Good nutrition, which has included additional beef consumption, can assume some of the credit for this. Yet, there are still consumer activists, scientists and health enthusiasts who would have us believe that beef consumption will lead to heart disease, cancer, and obesity. It is these exaggerations, inaccuracies, and mistruths about beef expressed by these "concerned groups" that need to be addressed.

The major form of coronary heart disease in the United States results from atherosclerosis and, with its complications, is the leading cause of death in the United States today. Because of this "killer" reputation, atherosclerosis and the suspected factors contributing to its creation have received widespread public attention.

Much is known about the mechanisms of heart disease, but little is known about its cause.

The atherosclerotic condition is thought to begin as tiny lesions in the arterial walls. Fatty blockages, consisting in part of cholesterol, a complex fat-like substance, build up around these lesions. In general, blood serum cholesterol levels are relatively high among people with atherosclerosis. Additionally, some population groups that eat high levels of saturated fats and cholesterol have a high incidence of coronary heart disease. Because foods originating from animal sources are the primary dietary sources of cholesterol and saturated fats, they were suggested as a possible cause of heart disease in the early 1950s. Since this time, the link between cholesterol and heart disease has been studied extensively.

One of the more recent headline-grabbing revelations was reported in 1984 by the National Heart, Lung and Blood Institute in which they listed cholesterol as the major villain in heart disease. The NHLBI study screened 3,806 men from 500,000 candidates, aged 35 to 59. All the candidates used in the study registered blood (serum) cholesterol levels higher than 265 milligrams per 100

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America's changing society is a fast-paced one, with less time for food preparation and fewer meals eaten together as a family. Most households today will purchase fast and easy foods that are microwaveable and / or can be prepared by any member of the family. Traditional beef products do not fit the expectations of the modern consumer.

Fashionability is another area to consider. How "trendy" is beef? Is it still considered "fashionable" to go out for a steak dinner, or is it losing its prestige as a special meal? Restaurants that once featured steaks may have changed their menus to include more seafood, chicken, and vegetable dishes to meet the demands of the consumers' current health interest. We have to make our product more appealing as well as to promote it for its nutritional value, especially as a source of protein, iron, and B vitamins. Beef has been a part of the American diet for generations, but we've failed to change its image.

What solutions are possible to again make beef a popular consumer choice?

In order to appeal to the public we need to change our marketing strategy. It's important to address those concerned with the diet and health issue, convenience, and fashionability. We need to make the public aware of the fact that beef is low in calories and cholesterol and high in nutrition. We can encourage a smaller serving, but increase the

frequency. As for convenience, a product needs to be developed which allows the consumer to get a meal together in a hurry. How about a microwaveable steak or a beef roast (vacuum packed) that could be just as popular as ham, sausage, or cheese for holiday gift giving? A quality beef roast packed in a can should certainly appeal to today's fast pace—what quicker way to slice off some good beef for a sandwich or a meat and potatoes meal? At this point it is crucial for us to up-date our product line.

A recent *Seventeen* magazine market survey showed that 37 percent of the family food budget was spent by teenagers. Marketing experts predict youth will double their consumption of snack foods in the next few years. What are we doing to make beef popular among teenagers? Are we working through the schools to teach the nutritional value of beef? Hamburgers alone are not enough to attract this potentially important market. As a junior Angus member, have you given any thought to promoting beef among your peers? Your future might depend on it.

The National Live Stock and Meat Board is doing what they can to change the negative attitudes of the consumer, but they can't do it alone. The successful promotion of our product is EVERYONE'S responsibility!

milliliters but exhibited no evidence of prior coronary heart disease. These men were divided equally into two groups so that each group was similar with regard to age, smoking habits, cholesterol intake, blood pressure and other variables. One group was treated with a drug to lower serum cholesterol and the other group was given a placebo. The diet for each group was moderate for all food groups.

The study proved one thing: that the group treated with the drug suffered 19 percent fewer heart attacks than the group treated with the placebo. This study was purely and simply a drug test on a group of men with very high levels of cholesterol. This study proved nothing concerning dietary cholesterol and serum cholesterol. Yet, *Time* magazine titled its March 26, 1984 cover story, "Hold the Eggs and Butter: Cholesterol is proved deadly and our diet may never be the same." It is this type of journalistic exaggeration that has given American consumers the idea that beef consumption leads to heart disease.

Studies, less publicized but nevertheless important, were conducted at the University of Missouri School of Medicine. One study examined men aged 32 to 62 years who ate beef as the only meat for three months, then poultry and fish as the only meat for three months, then pork as the only meat for three months. Results indicated that serum cholesterol was not significantly affected due to diet. In another study, one half of a group of men and women ate, within their diet, one egg and at least five oz. of beef daily for three months while the other half ate one egg and at least five oz. of poultry and fish daily. Then they reversed their diets for three months. There were no statistically significant changes in the serum lipids of men while women on the poultry and fish diet actually registered higher levels of serum triglycerides (one type of serum lipid). Unfortunately, studies like these that show little or no relationship between beef consumption and cholesterol levels have received very little press coverage.

Although conflicting research exists concerning the relationship of beef consumption and heart disease, the American Heart Association has recommended that all healthy individuals limit their fat intake to no more than 30 percent of their total daily caloric

intake and their saturated fat intake to no more than 10 percent of daily caloric intake.

Can we eat beef and still stay within these AHA guidelines? According to data from the National Live Stock and Meat Board, an individual would have to eat seven 3-oz. servings of cooked lean beef per day to get more than 30 percent of his calories from the fat in the beef. To get more than 10 percent of his calories from the saturated fat component of the beef, he would have to eat five 3-oz. servings per day. Also the AHA recommends daily cholesterol intake to be 300 milligrams or less each day. Two 3-oz. servings of cooked lean beef will provide 150 milligrams which is just one-half of the AHA recommended intake. Thus, beef certainly belongs in a diet based on the AHA guidelines.

Many scientists believe now that if there is any relationship between dietary fat and cancer, it is polyunsaturated fat that is the culprit, not saturated fat from red meat as previously believed.

Although the role of diet in the development of heart disease is unknown, it is known that other factors are involved. Heredity is involved because some people are more likely to develop high serum cholesterol and heart disease than are others, and diet may affect the serum cholesterol levels of these people. However, other people are not susceptible to heart disease and diet will not affect their chances of developing heart disease. The risk of developing heart disease is higher among those who smoke, have high blood pressure, are obese or diabetic. In fact, the National Heart, Lung, and Blood Institute surveyed 1,600 physicians, of which 400 were cardiologists, in 1984 and only 39 percent said that reducing blood cholesterol levels would have a "large impact" on the prevention or control of heart disease. However, 90 percent said that quitting smoking would, and 80 percent said the same about reducing high blood pressure.

Cancer is second only to coronary heart disease as a cause of death in the United States. However, the

United States does not have the highest cancer death rate in the world nor is the death rate from all forms of cancer on the rise in the United States. According to statistics from the American Cancer Society, the United States ranks eighteenth out of 48 countries in cancer deaths per 100,000 males in the population. The United States ranks seventeenth for female deaths from cancer.

In regard to cancer death rates in the United States, only lung cancer, of the 10 major cancer types studied by the American Cancer Society has shown any significant increase by increasing from five deaths to more than 400 deaths per 100,000 in the years from 1930-1980. Deaths attributable to cancers of the breast, colon, rectum, prostate, bladder, pancreas and also leukemia have remained relatively stable since 1950. Cancer of the uterus, liver and stomach have actually decreased since 1940.

Just as I previously mentioned that heart disease may be a result of an increasingly aged population, cancer may be thought of in a similar way. As a population lives longer, the people will have a greater chance of death due to a chronic disease such as cancer. Even though the American Cancer Society's data show that deaths due to lung cancer are the only cancer deaths presently on the increase, many individuals have proclaimed that there is a cancer epidemic presently sweeping the nation and that red meat is the underlying cause.

The cancer/diet hypothesis which has received the most attention is one that attempts to link dietary fat, particularly saturated fat, with certain forms of cancer. If one were to believe that a relationship exists between saturated fat and cancer incidence then the increase in red meat consumption since 1900 should be paralleled by an increase in cancer deaths. However, as I have pointed out previously, deaths from cancer of the stomach, colon and rectum have remained static or decreased since 1940 during which time red meat consumption has increased.

The most common form of cancer that may be affected by diet is stomach cancer. If it were not for lung cancer, stomach cancer would be the leading cause of cancer deaths, worldwide. It is believed that stomach cancer is caused by nitrosamines. Nitrosamines are formed when nitrates

come in contact with free amines in an acid environment, such as that provided by the stomach. Diets that are high in pickled vegetables and smoked fish tend to produce the highest amounts of nitrosamines. A diet such as this is common in Japan where deaths due to stomach cancer occur at eight times the rate found in the United States.

Nitrosamines produced in small amounts from the frying of processed meat products such as bacon have been implicated as potential cancer-causing agents in the United States. However, research has shown that less than five percent of an American's daily nitrosamine intake can be attributed to processed meat products. In fact many common vegetables contain up to 200 times as much nitrate as processed meats contain. Also processed meat consumption in the United States has increased by 200 percent since 1930 while at the same time deaths from stomach cancer have decreased by 80 percent. In addition, those who believe in the dietary fat/cancer hypothesis have no explanation for the fact that the Japanese diet contains much less fat than

the U.S. diet yet the Japanese suffer the higher death rate from stomach cancer.

Researchers who have maligned red meats and the saturated fat it contains have been recommending we substitute polyunsaturated fat for saturated fat whenever possible in our diets. Now it appears that this advice may have done more harm than good. The polyunsaturated fats contain chemical bonds called trans-fatty

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acid bonds, and recent research has shown that these chemically unnatural bonds affect the cell membranes thereby allowing cancer-causing agents easier access through cell walls. Scientific research at many universities has shown that polyunsaturated fatty acids produce cancerous tumors and speed up cell breakdown.

Many scientists believe now that if there is any relationship between dietary fat and cancer, it is polyunsaturated fat that is the culprit, not saturated fat from red meat as previously believed.

Perhaps the final blow to the theory that the consumption of red meat, particularly beef, causes cancer has been dealt by University of Wisconsin-Madison professor, Michael W. Pariza. Dr. Pariza's research indicates that there are chemicals in fried beef that actually protect against cancer.

In his research, mice were fed a well-known cancer-causing compound for 14 weeks. During this study, the mice that were given the anti-cancer chemicals isolated from fried beef, produced only one-third as many tumors as the untreated mice. Further research by Dr. Pariza has shown that even very small amounts of the chemicals isolated from fried beef can have very significant cancer protecting properties.

Obesity is the most common form of malnutrition in the Western nations of the world according to the Food and Nutrition Board of the National

Academy of Sciences. Different statistics have been quoted but as many as 40 percent of the adult American population is overweight and susceptible to the dangers that accompany this problem. Overweight people are much more likely to suffer from diabetes, high blood pressure and coronary heart disease. The good news is that beef is an excellent meal choice for those individuals counting calories. Two, three-ounce servings of cooked lean beef will provide 90 percent of an adult male's protein RDA at a calorie cost of only 16 percent of a daily 2,700 calorie diet. The nutrient density of beef makes it an ideal food to help with weight control. Also, beef is digested more slowly and completely than vegetables which makes meat more filling so that you do not get hungry again as quickly after eating a meal.

At John Hopkins University, different dieting methods were studied and people on a low calorie diet that included meat generally lost weight more easily and the weight tended to stay off. Individuals on vegetarian diets were more likely to quit their diets, become more irritable and perform less efficiently at work. Also they had more gastrointestinal problems and were more likely to regain weight that had been previously lost.

The National Live Stock and Meat Board recommends that an individual should select a nutritionally adequate diet from the foods available, by daily eating proper servings from all the food groups. That sounds like simple but nutritionally sound advice.

Even the American Heart Association is recommending that Americans should consume five to seven ounces daily from the meat group as part of a healthy diet.

Just as with all good food, beef should be eaten and enjoyed, but in healthy moderation. The idea of eating in moderation from all food groups has not inspired (or sold) many diet and health books, but I believe scientific evidence tells us that it is the surest way to good health. As consumers increase their own health awareness, and demand nutritious foods, it must be emphasized that beef is an excellent meal choice for these health-conscious consumers. So remember, be bullish on your health! Eat BEEF! **AJ**